Wyoming Game and Fish Department

Cody Region Angler Newsletter

Volume 14 2020

Inside this issue:

Fish Management in the Cody Region

Welcome to the 2020 Cody Region Angler Newsletter! A lot of great work took place last year and we have some very exciting projects planned for this summer. Our work strives to sustain and enhance the amazing aquatic resources in the Big Horn Basin.

We hope you enjoy these highlights and we look forward to seeing you on the water in 2020!

As always, please feel free to contact us with any comments or questions about the aquatic resources in northern Wyoming. Your input is important to us as we manage these resources for *you*, the people of Wyoming. You'll find all of our contact info on the last page of this newsletter.

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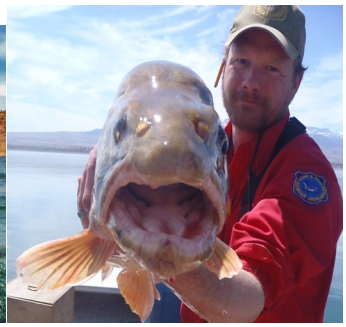

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Pro's and Con's of High Water at Newton Lakes

West and East Newton Lakes are among the most popular lakes for recreation in the Cody area. They offer something for everyone: a place to catch fish with kids, a chance to land a trophy trout, a quiet paddleboard outing with friends, or an evening stroll with your dog.

Regardless of your chosen activity, the ongoing changes in water levels are hard to miss. For those of you who haven't been to the lakes for a couple years, the water is high, very high! The following is a brief explanation on why this is happening and the pro's and con's of the high water.

WHERE IS ALL THE WATER COMING FROM?

The Newton Lakes are at the bottom end of the Trail Creek drainage within the Shoshone River watershed. In fact, West Newton Lake is the terminus of Trail Creek. The only way for water to leave West Newton Lake is through the natural sink holes along the southwest shoreline, evaporation, or flow into East Newton Lake. Over the last nine years in the Shoshone drainage we have experienced the three highest runoff years on record (records date back to 1952). What's more, during the other six years, runoff during all but one was above average and two were just shy of record years. These huge water years delivered substantial amounts of water into West Newton Lake and are the reason the lakes are so high.

The casting dock at East Newton Lake last October. The railing on the dock is now several feet under water.

THE CON'S:

The consequences of extreme environmental events tend to be many. For the Newton Lakes, the most obvious impact is loss of infrastructure and access. The trail along the perimeter of East Newton Lake is partially under water. The casting dock and loop road into East Newton are under water. Should the two lakes continue to rise (I am writing this in March, 2020), the outhouses may eventually be inundated. With the two lakes connected, the risk that the two fish communities merge is concerning. An illegal introduction of goldfish into West Newton Lake (first confirmed in 2014) has resulted in an established population of an undesired and potentially harmful fish. In January, 2020, we installed a large gravel berm between the two lakes to prevent movement of fish from one lake to the other. Preventing goldfish from entering East Newton Lake the primary objective.

THE PRO'S:

Declining water productivity in East Newton Lake has been a concern among Game and Fish and anglers for well over a decade. The water in Trail Creek is more productive than the water that is pumped into East Newton Lake from Heart Mountain canal. Getting Trail Creek water into East Newton will increase productivity of the ecosystem. Additionally, the increases in water elevation in both lakes is a natural way to bolster productivity because the newly inundated shorelines will release nutrients to the water. With the increased productivity in both lakes we expect trout growth rates to be markedly improved over the upcoming years and fishing to be as good or better than years past.

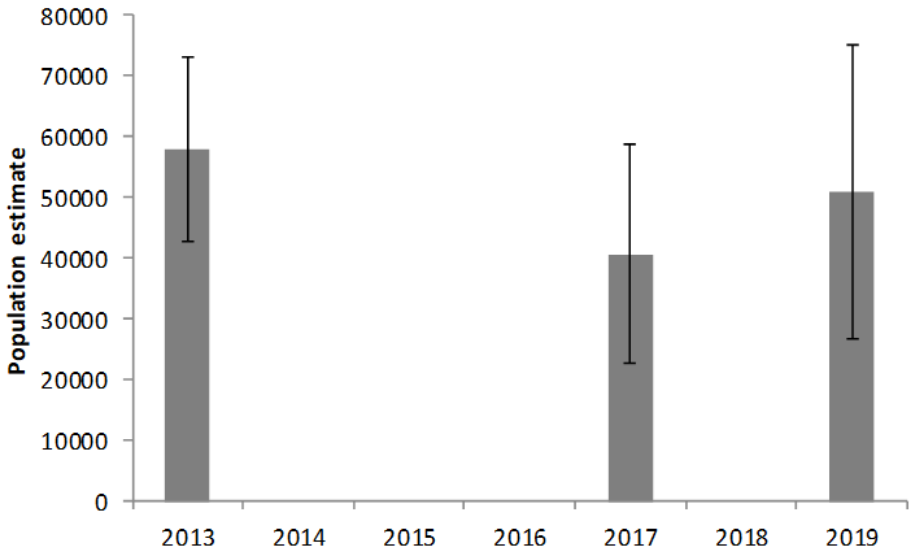
Buffalo Bill Reservoir Trout Numbers Up in 2019

The wild trout fishery in Buffalo Bill Reservoir is among the Cody Region's prized fisheries. It's also one of the most involved to monitor. We use hydroacoustics (essentially a fancy fish finder) to generate an estimate of pelagic fish abundance. Because the sonar equipment cannot be used in shallow water, the estimate is called "pelagic fish abundance" because it does not include fish near the shoreline.

The hydroaccoustic surveys are conducted every 2-3 years in mid August. Large curtain nets are set for short durations so that the estimate can be partitioned into species—the sonar only detects "targets" or fish and to know what proportion of targets are lake trout, suckers, rainbows, brown trout, etc. the curtain nets are critical. Species partitioning has been used since 2013.

For those of you who frequently fish Buffalo Bill and the North Fork of the Shoshone River, you will recall that 2017 was a tough year for fishing. Our data show that it was a tough year for the fish too. Buffalo Bill remained turbid from spring through the fall and fish were in very poor condition (skinny) going into the 2017/2018 winter. The 2017 estimate of rainbow, rainbow/cutthroat hybrids, and cutthroat (collectively referred to as Onchorynchus) abundance was 22,235 fish. This combination of low abundance and poor individual fish condition is a testament that environmental conditions are major drivers of fish (and wildlife) populations. To put it another way, even though the population was at a low point in 2017, the very poor condition of individual fish that summer and fall indicates food availability was low, even though fewer fish were in the population competing for food.

Last summer we estimated the Onchorhynchus population to be 36,973 fish. That is a 40% increase over the 2017 estimate and shows the population is on the rebound.



Hydroaccoustic estimates of total pelagic fish abundance in Buffalo Bill Reservoir.

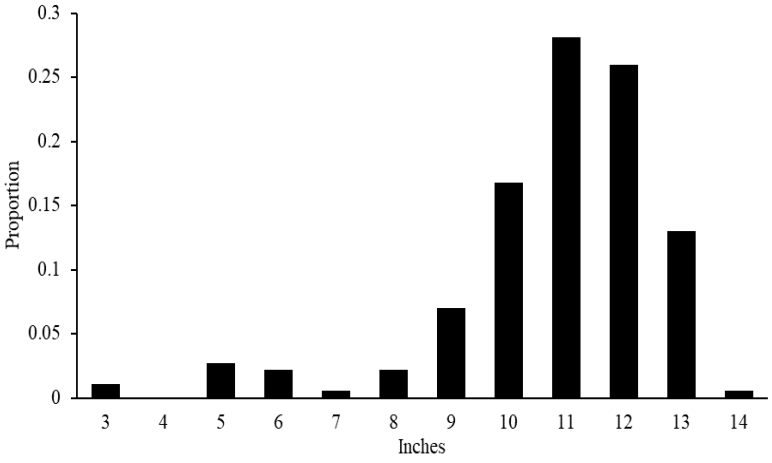
Renner Reservoir—Bass Transplant and Illegally Stocked Goldfish

The much anticipated largemouth bass re-stocking of Renner Reservoir occurred in mid-September of 2019. With the help of a generous landowner, Game and Fish captured 404 largemouth bass ranging in size from 3-14.5 inches from a nearby lake and transplanted them to Renner Reservoir. The average length of bass was 11 inches, so most of the stocked fish were on the larger end of the length range. We were extremely fortunate to work with a nearby landowner who allowed access to gather these fish from Carouthers Lake. Without his support and generosity, getting catchable largemouth bass to jump start the fishery this year, would not have been possible.

From left to right: Sam Hochhalter, Mark Smith, and Bart Burningham hold 6 of the 404 largemouth bass that were transplanted from Carouthers Pond to Renner Reservoir.

The transplant will result in a faster establishment of the bass population. The majority of bass transplanted were of catchable size and sexually mature, allowing for recruitment to occur in 2020. Both are key points that will bode well for producing a quality angling experience in the coming years. Another transplant is scheduled for 2020 and will be the last if natural recruitment is observed.

The stocking of bass brings a multi-year rehabilitation effort of Renner Reservoir to a close— or at least we thought so. Goldfish were discovered in April of 2020, forcing us to re-evaluate our efforts to establish a quality sport-fishery.



Length frequency of largemouth bass transplanted into Renner Reservoir in 2019.

The illegal stocking of goldfish will change the ecological dynamics of the fishery and complicate management strategies focused on largemouth bass. This is very disappointing and frustrating as a fisheries manager, especially after Game and Fish recently invested over $324,000 to rehabilitate the reservoir infrastructure and largemouth bass fishery.

Renner Reservoir—Bass Transplant and Illegally Stocked Goldfish

Under the right conditions, goldfish will proliferate, binding up resources that could be used by largemouth bass. Goldfish are fast growing, with mature individuals averaging about 12 inches, but can grow to 19 -23 inches; all sizes that cannot be preyed on by largemouth bass. This is not ideal for the fishery or fishermen seeking an outstanding angling experience that Renner was once known to be.

During the survey on April 1, we documented over 500 goldfish of multiple age classes ranging in size from 3-6.5 inches. This indicates that natural recruitment is occurring in the reservoir and will continue. The abundance and growth of goldfish observed indicate they will become a problem if not addressed. Based on this data, goldfish were likely illegally stocked in the fall of 2018.

From left to right: 3, 4, 5 and 6 inch goldfish collected for aging, along with bucket full of other individuals in Renner Reservoir.

The fisheries management crew in Cody is committed to Renner Reservoir's success as a fishery. However, the illegal stocking of goldfish greatly complicates this scenario and puts a successful outcome at risk. Further it will require additional time and effort to work on this threat that could have been spent on other high priority fisheries issues in the Bighorn Basin. The management action that will be taken is to create a high predator load to reduce goldfish numbers. Another transplant of bass will occur in 2020 as well as a fall stocking of tiger musky. Our hope is these two predators will greatly reduce goldfish number to the point that they do not pose a threat to the fishery. Renner will be closely monitored, and time will tell if the action is successful.

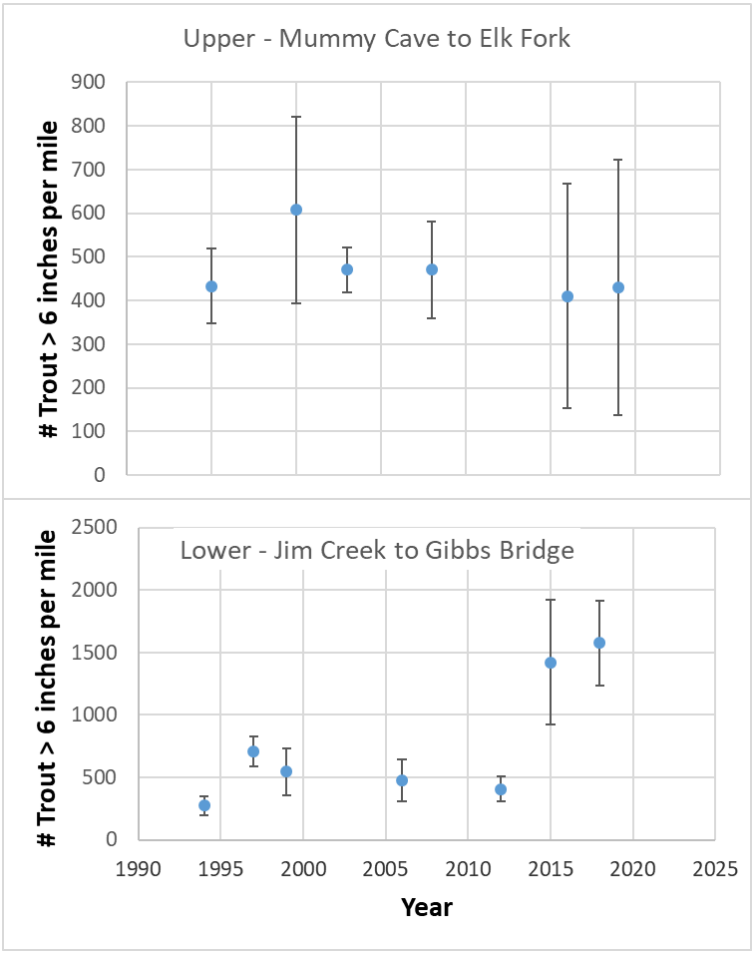
Adult (left) and age-1 (right) goldfish form Renner Reservoir. These goldfish represent the largest and smallest currently found in Renner Reservoir.

North Fork Tagging Project—We Need Your Help!

Managing and monitoring fish populations can be pretty straightforward at times. For small lakes where we stock trout each year it may be as simple as setting a net or two over night, measuring fish for length and weight, evaluating growth rates and fish densities, and then tweaking our stocking accordingly.

And then there are fish populations where the word "straightforward" cannot be used to describe management and monitoring. For these populations standard monitoring techniques more often than not provide data that leads to as many questions as answers. Case in point, the rainbow and cutthroat trout population in the North Fork of the Shoshone River and Buffalo Bill Reservoir.

We briefly touched on how we monitor trout in Buffalo Bill Reservoir in a previous article (see page 4). Through last year, we have used multiple pass mark-recapture techniques to estimate trout abundance in the North Fork of the Shoshone River. These surveys provide us with the number and biomass of trout in a 4 mile section of the river during the week the survey took place. As most anglers know, the trout in the North Fork are highly mobile. These fish enter the river in the spring from their winter habitat; Buffalo Bill Reservoir. They spawn in the main river channel and in all 26 of the major tributaries to the North Fork. After spawning, the trout stay in the North Fork for a few days to several months. All adult trout that migrated into the North Fork drainage in the spring return to Buffalo Bill by late fall. This begs the question: Are most fish still in the river at the time of the survey or are most fish back in the reservoir?



The figures to the right are the estimates of trout abundance at the two river sections that we monitor. Notice that each section is surveyed once every three years. Changes in abundance between years could be explained by actual changes in the population. Changes could also be explained by year-to-year differences in distribution or timing of out-migration back to Buffalo Bill. It's this uncertainty in interpretation of the data that has led us to launch a new project that will provide some much needed clarity.

In a nutshell, the project will involve tagging up to 2,000 rainbow, rainbow/cutthroat hybrid, and cutthroat trout in the spring for the next 4-5 years. In June and July we will do surveys of the entire North Fork from Pahaska down to Gibbs Bridge to document the distribution of tagged fish. We will also be relying heavily on anglers to report the capture of tagged fish throughout the year.

Each trout will have two tags. There is a tag number on one side of each tag and a phone number on the other side. If you catch a tagged fish we need both tag numbers!

Each year for the next 4 years as many as 2,000 trout will be tagged in the North Fork of the Shoshone River. This photo shows the tag location in a rainbow/cutthroat hybrid trout. Calling Game and Fish to report the capture of a tagged fish is critical to the success of the project. You also will be entered to win $100, a Yeti cooler, or a Trager Grill! Prizes are sponsored by the Adiposse Chapter of Trout Unlimited.

Working Group Makes Progress on Sediment Input in Shoshone River

In fall 2016, 96,000 cubic yards or 6,857 dump truck loads of sediment was released from behind Willwood Dam impacting downstream fisheries and aquatic habitat as well as downstream landowners. The WGFD is participating in working groups to develop alternatives for the long-term management of sediment behind the dam, identify sources of sediment to the Shoshone River upstream of the dam, and identify voluntary management measures to mitigate those sources. The objective is to reduce the volume of sediment that accumulates at Willwood Dam through implementation of voluntary best management practices (BMPs) designed to reduce the introduction of sediment into the Shoshone River above Willwood Dam. The group is comprised of members from the Willwood Irrigation District, local agricultural producers, Wyoming Department of Environmental Quality, Wyoming Game and Fish Department, Bureau of Land Management, Powell Clarks Fork Conservation District, Cody Conservation District, Natural Resources Conservation Service, Wyoming Association of Conservation Districts, East Yellowstone Chapter of Trout Unlimited, University of Wyoming Extension, and The Nature Conservancy.

The work group met approximately monthly throughout the remainder of 2017, 2018, and into 2019 to focus on identifying potential sediment sources to the Shoshone River and its tributaries, prioritizing the impact of those potential sediment sources, and identifying potential projects and funding sources that might be voluntarily applied with landowners and agencies to reduce sediment loading. Efforts of the work group also included identifying data gaps and monitoring needs, with some preliminary data collection efforts started in 2017 and continued in 2018 and 2019. In support of these planning efforts, group members completed on the ground habitat assessments on Lakeview Creek, Sulphur Creek, Idaho Creek, Cottonwood Creek, Sage Creek, and Dry Creek/ Homesteader Creek.

In 2019, the group finalized the watershed plan and produced two Story Maps. The first Story Map provides a summary of the watershed plan and the collaborative efforts taken to develop the plan (https://arcg.is/1ymq19). Additional watershed planning information, including detailed information and proposed management measures for each sub-watershed, is available in the second Story Map (https://arcg.is/0PmPvS). The WGFD assisted in the presentation of the watershed plan to the public, Park County Commissioners, East Yellowstone Trout Unlimited, and the irrigation districts.

Update on Sunlight Creek Restoration

Sunlight Wildlife Habitat Management Area (WHMA) consists of 1,414 acres of invaluable wildlife and fisheries habitats along Sunlight, Trail, and Painter creeks. The Sunlight WHMA was purchased in the 1960s by the Wyoming Game and Fish Department (WGFD) to preserve the area for wildlife habitat, public use and access to adjacent U.S. Forest Service lands. Since purchasing the Sunlight WHMA in 1960, the WGFD has lost 7.3 acres of uplands and 1.9 acres of riparian habitats due to unnatural stream channel movements and severe bank erosion. In 2017, one of the stream banks eroded 150 feet laterally, eroding crucial moose and elk winter range and dumping over 31,000 tons or 1,855 dump truck loads of sediment into Sunlight Creek. In 2018, this stream bank moved an additional 100-feet, eroding additional winter range, dumping more sediment in Sunlight Creek, and resulting in the closure of public access roads for approximately 3 weeks.

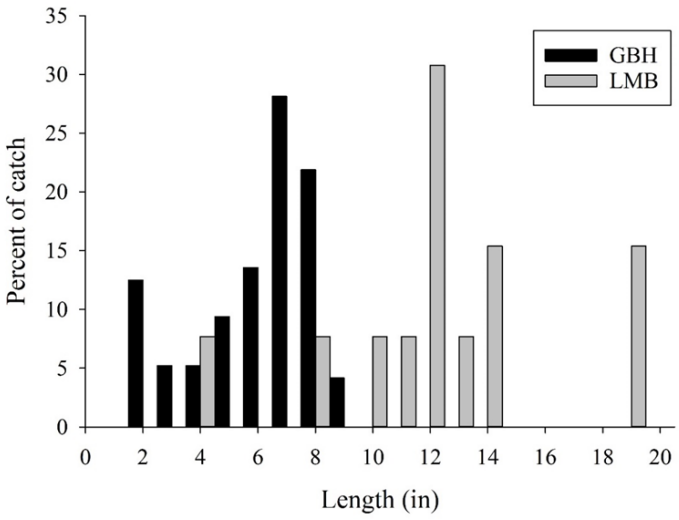
In 2015, the WGFD began planning a stream restoration project on Sunlight Creek to 1) reduce unnatural bank erosion rates, 2) improve fish habitat, 3) restore riparian and wetland habitats, 4) protect the crucial moose and elk winter range, 5) protect public access, and 6) protect WGFD infrastructure. Natural channel design methodologies were utilized to repair channel degradation and enhance fish habitat across 0.8 mile of stream.

Construction efforts to date have eliminated the unnatural rate of bank erosion that was occurring and added substantial trout habitat. The channel realignment eliminated the observed annual bank erosion of up to 150 feet and prevented 31,540 tons of sediment entering sunlight Creek each year.

In total WGFD is creating 25 acres of new riparian and wetland habitats in addition to fisheries habitat in 4,000 feet of Sunlight Creek and 850 feet of new channel for Painter Creek. In addition, approximately 10,000 willows were planted in the floodplain and along Sunlight and Painters Creek's.
In August and September of 2020, the final construction of the remaining 1,300 feet of Sunlight Creek and the revegetation and planting of the 25 acres of riparian and wetland areas will occur. The riparian and wetland areas are going to provide much needed habitats for moose in the Sunlight Basin. Large riparian and wetland complexes are lacking in Sunlight Creek due to natural channel movements that drain wetlands and also due to tile drains that have been installed in surrounding agricultural fields to drain wetlands.

Pond 5 Largemouth Bass and Hybrid Sunfish

Pond 5 on the Yellowtail Wildlife Habitat Management Area near Lovell is a small pond with a reputation for producing some quality sunfish. This pond is approximately 8 miles from town and can be considered a "community pond" given its proximity to Lovell and ease of access.



Length-frequency of bluegill/green sunfish hybrids (GBH) and largemouth bass (LMB) sampled in Pond 5 in May, 2019.

Bass and sunfish have a symbiotic relationship when natural recruitment occurs. However, Pond 5 has little to no natural recruitment and is instead managed through stocking. Although bass were not abundant in the 2019 survey, the size-structure of population in Pond 5 has improved with a large proportion of individuals greater than 12 inches. This is an improvement from 2014 with mean length increasing from 8.7 to 11.9 inches. While an improvement in size-structure was documented, catch rates were substantially lower than previous years. This increase in size structure and poor catch rate can likely be attributed to the lack of stocking in recent years and poor recruitment. The hybrid sunfish are performing well relative to other Bighorn Basin ponds with a good segment of the population > 6 inches.

A representative bluegill/green sunfish hybrid sampled in Pond 5 in May, 2019.

Joe Skorupski with a nice largemouth bass sampled in Pond 5 in May, 2019.

Wyoming Game and Fish Department
Conserving Wildlife-Serving People

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Important Dates to Remember in 2020

- June 6, 2020— **Kids Fishing Day (Cody) and Wyoming's Free Fishing Day** *This event has been canceled due to covid 19 concerns.*
- March 1—November 30—**Aquatic Invasive Species Boat Inspections** *All watercraft transported into the state from March 1 through November 30 are required to undergo a mandatory inspection by an authorized inspector prior to launching. A list of authorized inspectors can be found on the Game and Fish website on the AIS page.*
- Mid July —**Bighorn National Forest Kids Fishing Day** *Join the Bighorn National Forest for a day of fishing fun at the Porcupine Creek Ranger Station. The date of this event will be determined following future guidance on covid 19.*

We welcome all questions and comments on this newsletter or about the fisheries resources within the Cody Region. Please feel free to give us a call at 307 527-7125 or send an email to:

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